

In the Claims

Sub B1
1. [**Currently Amended**] A link layer controller comprising:
a network layer interface configured to exchange packets with a network layer system and transfer a status signal to the network layer system;
a physical layer interface configured to exchange the packets with a physical layer system; and
a memory controller configured to exchange the packets with the network layer interface, exchange the packets with a memory, exchange the packets with the physical layer interface, and generate the status signal to indicate available space in the memory and to indicate a memory over-run or a memory under-run.

2. [Original] The link layer controller of claim 1 wherein the memory includes a plurality of transmit buffers and wherein the status signal indicates the available space in each of the transmit buffers.

3. [Original] The link layer controller of claim 2 wherein the memory controller is configured to control a size of each of the transmit buffers in response to external instructions.

4. [Original] The link layer controller of claim 3 wherein each of the transmit buffers corresponds to a transmit channel and the memory controller is configured to provide transmit priority to one of the transmit channels with transmit buffer occupancy exceeding a threshold.

5. [Original] The link layer controller of claim 1 wherein the network layer interface is configured to use a packet exchange bus to exchange the packets with the network layer system and to transfer the status signal to the network layer system.

6. [Original] The link layer controller of claim 5 wherein the network layer interface is configured to use the packet exchange bus to exchange parity information with the network layer system.

7. [Original] The link layer controller of claim 5 wherein the network layer interface is configured to use the packet exchange bus to exchange data validity information with the network layer system.

8. [Original] The link layer controller of claim 5 wherein the network layer interface is configured to use the packet exchange bus to exchange start of packet information and end of packet information with the network layer system.

9. [Original] The link layer controller of claim 5 wherein the network layer interface is configured to use the packet exchange bus to transfer a synchronization signal to the network layer system.

10. [Original] The link layer controller of claim 5 wherein the network layer interface is configured to use the packet exchange bus to exchange stop transfer signals with the network layer system.

11. [Currently Amended] A method of operating a communications device, the method comprising:

transferring packets between a network layer system and a link layer system;
transferring the packets between the link layer system and a physical layer system;
transferring the packets between the physical layer system and a communication path;
generating a status signal in the link layer system indicating available space in link layer memory and indicating a memory over-run or a memory under-run;
transferring the status signal from the link layer system to the network layer system;
processing the status signal in the network layer system to control the exchange of the packets between the network layer system and the link layer system.

12-13. [Cancelled]

14. [Original] The method of claim 11 wherein the link layer memory includes a plurality of transmit buffers that each correspond to a transmit channel, wherein the status signal indicates the available space in each of the transmit buffers, and further comprising:

controlling a size of each of the transmit buffers in the link layer system in response to instructions from the network layer system; and
providing transmit priority to one of the transmit channels if corresponding buffer occupancy exceeds a threshold.

15. [Original] The method of claim 11 wherein transferring the packets and the status signal between the network layer system and the link layer system comprises using a packet exchange bus.

16. [Original] The method of claim 15 further comprising transferring parity information over the packet exchange bus.

AX
17. [Original] The method of claim 15 further comprising transferring data validity information over the packet exchange bus.

BN
18. [Original] The method of claim 15 further comprising transferring start of packet information and end of packet information over the packet exchange bus.

19. [Original] The method of claim 15 further comprising transferring a synchronization signal over the packet exchange bus.

20. [Original] The method of claim 15 further comprising transferring stop transfer signals over the packet exchange bus.
